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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/783,174	02/20/2004	Larry F. Rhodes	204PR02161-US	7299

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EXAMINER

THORNTON, YVETTE C

ART UNIT	PAPER NUMBER
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1752

DATE MAILED: 05/13/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/783,174

Applicant(s)

RHODES ET AL.

Examiner

Yvette C. Thornton

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 February 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 February 2004 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 09242004.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

This is written in reference to application number 10/783,174 filed on February 20, 2004 and published as US 2004/0166436 on August 26, 2004.

Priority

1. Applicant's claim for domestic priority under 35 U.S.C. 119(e) is acknowledged. *Information*

Disclosure Statement

2. The Information Disclosure Statement(s) filed on September 24, 2004 has/(have) been entered and fully considered.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

4. Claims 1-3 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The phrase "having a desired exo mole percent" renders the claims vague and indefinite. A "desired" amount can be from 0 to infinity. The examiner is unclear as to what the applicant is claiming as his invention.

For the purposes of examination, the broadest interpretation of the claims has been applied.

5. Claims 2-3 provides for the use of the claimed photoresist composition of instant claim 1, but, since the claim does not set forth any steps involved in the method/process, it is unclear what method/process applicant is intending to encompass. A claim is indefinite where it merely recites a use without any active, positive steps delimiting how this use is actually practiced.

Claim Rejections - 35 USC § 101

6. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

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7. Claims 2-3 are rejected under 35 U.S.C. 101 because the claimed recitation of a use, without setting forth any steps involved in the process, results in an improper definition of a process, i.e., results in a claim which is not a proper process claim under 35 U.S.C. 101. See for example *Ex parte Dunki*, 153 USPQ 678 (Bd.App. 1967) and *Clinical Products, Ltd. v. Brenner*, 255 F. Supp. 131, 149 USPQ 475 (D.D.C. 1966).

Claim Interpretation

8. The examiner is of the position that any composition as set forth in instant claim 1 would be *capable* of improving the imaging capability of a photoresist composition (cl. 2) and *capable* of controlling the differential dissolution rate of a photoresist composition (cl. 3). Thereby meeting the limitations of instant claims 2 and 3.

Claim Rejections - 35 USC § 102

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

10. Claims 1-3 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Kinsho et al. (US 6,284,429 B1). Kinsho teaches an ester compound having an exo-form 2-alkylbicyclo[2.2.1]heptan-2-yl group as the protective group as well as a polymer comprising units of the ester compound. The said polymer is used as a base resin to formulate a resist composition having a high sensitivity, resolution and etching resistance compared to conventional resist compositions (abstract). See also c. 6, l. 57-c. 7, l. 67.

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11. Claims 1-3 are rejected under 35 U.S.C. 102(e) as being clearly anticipated by Shin et al. (US 2003/0004289 A1). Production Example 2 exemplifies the synthesis of 4-oxa-tricyclo[5,2,1,0(2,6)]dec-8-en-3-one (NL) having an endo and exo mixture in 80% yield (p. 0057-0059). The said monomer was used to synthesis a copolymer of 5-norbornene-2-carboxylic acid (NCA) and NL (production ex. 5; p. 0072-0074) and a terpolymer of poly[ANCA/NCA/NL] (production ex. 12; p. 0097-0099). The said copolymer of example 12 was admixed with an acid generator and a solvent to form a photoresist composition (p. 0116-0120).

12. Claims 1-3 are rejected under 35 U.S.C. 102(e) as being clearly anticipated by Boardman et al. (US 6,358,675 B1). Example 8 of Boardman exemplifies the synthesis of a monomer Norbornene Ester 1 having an approximately 55:45 mixture of endo and exo isomers (c. 11, l. 45-c. 12, l. 6). The said ester was used in the preparation of polymer 3 (ex. 9), which is a terpolymer of bicycle[2.2.1]hept-2-ene, Norbornene Ester 1 and maleic anhydride (c. 12, l. 8-27). A resist solution was then prepared by combining the said terpolymer with an acid generator and a solvent (ex. 10; c. 12, l. 29-55).

Conclusion

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.


- Jung et al. (US 6,866,984 B1) pertaining to ArF photoresist compositions. See ex. 1.
- Tachibana et al. (US 6624335 B1) pertaining to ether, polymer, resist compositions and patterning process thereof. See ex. (1-1) and (1-2).

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yvette C. Thornton whose telephone number is 571-272-1336. The examiner can normally be reached on Monday-Thursday 8-6:30.

15. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cynthia H. Kelly can be reached on 571-272-1526. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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16. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Yvette Clarke Thornton
Primary Examiner
Art Unit 1752

yct
May 10, 2005